Trophic interactions among aphidophages in Europe

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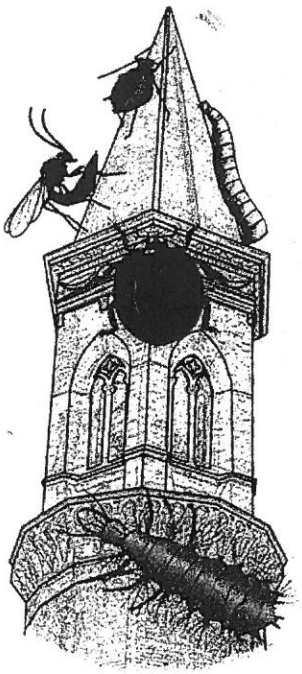

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TROPHIC INTERACTIONS AMONG APHIDOPHAGES IN EUROPE: THE CASE OF THE INVASIVE LADYBIRD *HARMONIA AXYRIDIS* AND THE FLOWER BUG *ANTHOCORIS NEMORALIS*

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The establishment of *Harmonia axyridis* (released as a biocontrol agent) in North America has been linked with adverse impacts on non-target species including native ladybirds. A similar effect on native European ladybirds (Coleoptera: Coccinellidae) e.g. the two-spot ladybird *Adalia bipunctata*, could be a result of its successful, ongoing establishment. The ecological mechanisms behind these trends are believed to include resource competition and intraguild predation. Potentially, the entire aphidophagous guild of insect predators might be influenced by the presence of *H. axyridis*, e.g., ladybirds, lacewings (Neuroptera), hoverflies (Diptera: Syrphidae) and flower bugs (Heteroptera: Anthocoridae). In Denmark, when the second generation of *H. axyridis* are actively feeding, most native coccinellids are least active. Anthocorids, on the other hand, are often found feeding on aphids at this time of year and thus there potentially exists a period of several months during late summer/autumn when anthocorids and *H. axyridis* are in competition for prey. As little attention has been given to anthocorids in connection with invasive species (and in particular in connection with *H. axyridis*) this Ph.D. project is in part investigating trophic relationships between *H. axyridis* and flower bugs of the genus *Anthocoris*. Preliminary studies of intraguild predation in Petri dishes have shown third and fourth instar ladybird larvae to be consistent intraguild predators of adult *Anthocoris nemoralis*. Here we present further results from laboratory assays of intraguild predation as well as future directions based on gut detection of flower bug remains using DNA barcoding.

Key words: Intraguild predation

EFFECTS OF *LYSIPHLE* *APHIS GLYCINES* MAT

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Soybean aphid (*Aphis gl* of soybeans in North Ar several parasitoid specie imported into quarantin control agents. One such population of *L. orientalis* making it more likely to control agent. This in tur reared in quarantine, cag contain both greater num of live aphids than cage aphid parasitoid increa advantageous for the pa control. Here, we presen to reveal if *L. orientalis* reproduction. Potential n work on this subject are c

Key words: soybean aph